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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/602,874      | 06/25/2003  | Takahiro Amanai      | 12706/5             | 2241             |

7590 09/03/2004  
KENYON & KENYON  
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Washington, DC 20005

EXAMINER

THOMAS, BRANDI N

ART UNIT PAPER NUMBER

2873

DATE MAILED: 09/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |   |  |
|------------------------------|--------------------------------------|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/602,874 | <b>Applicant(s)</b><br>AMANAI, TAKAHIRO |  |
|                              | <b>Examiner</b><br>Brandi N Thomas   | <b>Art Unit</b><br>2873                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 6/17/04.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,8-11,13-15,17,18 and 20 is/are rejected.
- 7) ☒ Claim(s) 3,7,12,16 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> .                  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 6, 9-11, 15, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bowen et al. (6324010 B1).

Regarding claims 1, 6, 9, 10, and 15, Bowen et al. discloses an image pickup lens unit, in figures 9A-9D, comprising at least three optical elements (12) (triplet in figure 9D) (col.3, lines 13-15 and col. 4, lines 49-50) having at least an air interval for forming an air lens wherein the optical elements are formed unitarily (col. 3, lines 16-20) and wherein the optical elements are cemented (using epoxy 91, figure 9B) mutually between the other optical elements which neighbors in an optical axis (col. 5, lines 24-32) or with a sandwiching member (31) which is cemented with the other optical elements (col. 4, lines 37-41).

Regarding claims 2, 11, and 18, Bowen et al. discloses an image pickup lens unit wherein side surfaces of the optical elements are aligned in a surface (protrusions 123, figure 14) which expands in the optical axis direction (col. 5, lines 31-40).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 8, 13, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowen et al. (6324010 B1) as applied to claim 1 above, and further in view of Fujimoto et al. (6373635).

Regarding claims 4, 13, and 20, Bowen et al. discloses an image pickup lens unit including optical elements except that it does not show a light absorbing member. Fujimoto et al. shows that it is known to provide a light absorbing member (light shielding layer 15, figure 16) for shielding incoming light and preventing the incoming light from going into the next lens (col. 9, lines 12-15). Therefore it would have been obvious to someone of ordinary skill in the art at the time the invention was made to combine the device of Bowen et al. with the light absorbing layer of Fujimoto et al. for the purpose of shielding incoming light and preventing the incoming light from going into the next lens (col. 9, lines 12-15).

Regarding claims 8 and 17, Bowen et al. teach the image pickup device as disclosed above except an optical filter member cemented to the optical element. However, within the same field of endeavor, Fujimoto et al. teach for example, an optical filter member (light shield 3, fig. 1) cemented to the optical element (col. 1, lines 62-65).

Art Unit: 2873

5. Claims 5 and 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowen et al. (6324010 B1).

Regarding claims 5 and 14, Bowen et al. teach the image pickup lens as disclosed above, including the use of various lenses but, Bowen et al. fails to explicitly teach wherein the maximum of the inclination angle  $\theta$  that is not more obtuse than 60 degrees on each optical surface in the optical element under the condition that an angle between an optical axis in an optical surface in the optical element and a normal in an effective diameter in the optical surface is defined as an inclination angle  $\theta$ . However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have an inclination angle  $\theta$  that is not more obtuse than 60 degrees in the optical element under the condition that that an angle between an optical axis in an optical surface in the optical element and a normal in an effective diameter of the optical surface, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering an optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Bowen et al. to have  $\theta$  that is not more obtuse than 60 degrees in the optical element under condition that the  $\theta$  is defined as an angle made between the optical axis in an optical surface in the optical element and a normal in an effective diameter of the optical surface for the purpose of effectively directing light through the image pickup device.

***Allowable Subject Matter***

6. Claims 3, 7, 12, 16, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claim(s), in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in claim(s) 3, 7, 12, 16, and 19, wherein the claimed invention comprises image pickup lens unit wherein conditional such as  $ST/TD < 0.7$  and  $MT/TD < 0.5$  are effective under the condition that an interval between a first surface in an optical system in which the optical elements are cemented and a last surface in the optical system, wherein a relationship such as  $0 < |\phi/\phi_A| < 0.5$  is effective under condition that a maximum power in a cemented surface of the lens is defined as  $\phi$ , and a power of the optical element which is formed unitarily in an overall optical system is defined as  $\phi_A$ , as claimed.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fujimoto et al. (6707613 B2) discloses a lens array unit including first and second lens arrays cooperative with each other.

Amanai (US 20040047274 A1) discloses lenses forming an optical element having a power are cemented together in an optical axis direction.

***Response to Arguments***

8. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. In regards to claims 1-20, the feature that "one of the optical elements is cemented mutually with the other optical elements" has been addressed with the use of an epoxy material for bonding.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandi N Thomas whose telephone number is 571-272-2341. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BNT

BNT  
September 1, 2004

  
RICKY MACK  
PRIMARY EXAMINER